E-ISSN: 3047-9460, P-ISSN: 3048-3786
Safety and Health for Medical Workers (SHMW), Vol 1, No 4, (2025), Page. 225-238
https://doi.org/10.69725/shmw.v1i4.309

How Does Psychological Capital Buffer Job Stress in Dental Healthcare Workers?

Desi Andriyani [c], **Lies Elina Prasetiowati** [b],

[a.] *Master Programme of Occupational Health and Safety, Universitas Indonesia, Jakarta, Indonesia*
[b.]

INFORMATION INFO

Information Article;

Submitted: 12 August 2024
Received: 18 September 2024
Revised: 14 October 2024
Accepted: 21 November 2024
Published Online: 10 January 2025

Correspondence;
Desi Andriyani

Keyword;

Job Burnout, Psychological Capital, Work Engagement, Safety Climate, Transformational Leadership

ABSTRACT

Objective: The influence of organisational factors and psychological resources on occupational well-being in dental healthcare is examined in this study. It looks at how work engagement, safety climate and transformational leadership directly impact job burnout, and whether psychological capital strengthens these protective factors.

Methods: To measure the key concepts, we used scales that had been shown to be valid. Information was examined via structural equation modelling and hierarchical regression to evaluate direct and moderating impacts, with measurement models confirmed for reliability and validity.

Findings: The analysis shows that work engagement, safety climate and transformational leadership can all play a key role in preventing job burnout. Also, good mental health can make these bad relationships much better. Individuals with high levels of psychological capital demonstrate a greater ability to convert supportive work conditions into sustained well-being.

Novelty: This research is pioneering because it shows how organisational resources and personal capabilities work together. Psychological capital is established not just as a complementary factor, but as a catalytic resource that optimises the impact of workplace conditions on professional health.

Research Implications: The study provides a theoretical advancement by integrating organisational and positive psychology perspectives. Psychological capital is identified as a strategic leverage point for the purpose of practice. This suggests that interventions targeting this resource can maximise the effectiveness of organisational support systems. The result of this is that sustainable professional practice and enhanced care quality are promoted.

1. Introduction

E-ISSN: 3047-9460, P-ISSN: 3048-3786
Safety and Health for Medical Workers (SHMW), Vol 1, No 4, (2025), Page. 225-238
https://doi.org/10.69725/shmw.v1i4.309

Dental healthcare is one of the most stressful professional fields globally, and it is associated with high risks of burnout, musculoskeletal disorders, and mental health strains. Recent studies have reported a shockingly high prevalence of burnout among dental professionals, with prevalence rates ranging from 30% to 70% in several countries (Almeida-Meza et al., 2025; Montoya et al., 2021; Smith & Leggat, 2007). The situation has been worsened by the COVID-19 pandemic, which has skyrocketed workplace stressors, including increased infection anxiety and procedural complexity. Dental healthcare workers expose themselves to unique occupational hazards, such as prolonged static postures, their lifestyle, exposure to infectious agents, and high-pressure patient exposures that significantly increase their psychological distress (Căminișteanu et al., 2025; Dal et al., 2025; Suedbeck et al., 2021). This concerning trend raises the alarm on the need to investigate protective factors and interventional strategies to protect this vital component of the healthcare workforce (Haughton & Stang, 2012; Jamal et al., 2025; Schimmels et al., 2025).

Critically, the most salient gap in filling the issue of dental occupational health today is psychology wellbeing. Despite vast and empirically justified research on classical infection control and ergonomics, the absence of psychological research on dental workplaces is apparent. (MUELLER et al., 1994; Raskin et al., 2022) the state of modern healthcare, including staffing shortage, increasing demand for service, and higher administrative load, is a unique and, in a way, a severely adverse situation for DHWs psychological safety. At the same time, dental care organizations are highly unequal (Clermont et al., 2025; Ju et al., 2021; Raeesi et al., 2025). Mention the overly early structure of clinics and private practices. Hence, from my perspective, the most imminent actions include a comprehensive approach that will incorporate both secondary, tertiary and primary preventive measures on both organizational and individual programs.

This study uses three different theoretical frameworks to support its findings. The Job Demands-Resources (JD-R) Model is a comprehensive framework for understanding the mechanisms that lead to burnout (Choubey & Agrawal, 2025; Li et al., 2025). It shows that the syndrome happens when there is a problem with the way a person's job demands compare to the resources available to them. Secondly, the Conservation of Resources (COR) Theory illuminates the motivations behind individuals' efforts to protect, maintain and accumulate psychological resources in the face of stressors (Kao et al., 2025; Luo & Liang, 2025; Nahum, 2025). Thirdly, the Positive Organisational Behaviour (POB) Perspective emphasises that psychological capital is a dynamic and developable personal resource. Together, these frameworks suggest that job engagement, safety climate and transformational leadership are important job resources that can mitigate the effects of burnout, particularly when employees possess substantial psychological capital.

The urgency and novelty of this research are based on significant gaps in the existing literature, both contextual and methodological. Studies conducted in developed Western countries have consistently demonstrated a clear correlation between specific organisational factors and job burnout (Dhakal & Mahmood, 2025; Kyambade et al., 2025; Liu et al., 2025). These factors include work engagement, safety climate, and transformational leadership (AbdELhay et al., 2025; Ho et al., 2025; Malik et al., 2024). However, emerging research from developing countries, including Indonesia, reveals contradictory and inconsistent findings. For example, while some studies have found a negative influence of work engagement on burnout, others in similar contexts have reported non-significant or even paradoxical positive relationships (Dange et al., 2025; Garza et al., n.d.; Zhou et al., 2025). Conversely, Western healthcare systems have well-documented evidence of the protective effect of a favourable safety climate and effective transformational leadership. However, evidence from Southeast Asia is less consistent. These include a big difference in how much power there is in the culture, not much money and different healthcare systems (Atkinson, 2002; Janzen, 1978). Examples of this include Indonesian nurses' perceptions of safety climate (Putra et al., 2021). This incongruity creates a significant gap in our understanding regarding the universal applicability of existing theories, highlighting the need to examine these dynamics within Indonesia's unique socio-cultural and economic context, where hierarchical structures and limited mental health resources could potentially alter established relationships (Indrayanti et al., 2025; Rhodes et al., 2025).

Consequently, this study aims to comprehensively investigate the complex interplay between work engagement, safety climate, transformational leadership, psychological capital

E-ISSN: 3047-9460, P-ISSN: 3048-3786
Safety and Health for Medical Workers (SHMW), Vol 1, No 4, (2025), Page. 225-238
https://doi.org/10.69725/shmw.v1i4.309

and job burnout among Indonesian dental healthcare workers. The aim is to establish the direct impact of these key organisational and psychological factors on burnout. Additionally, it seeks to determine how an individual's psychological capital can act as a shield against the negative effects of workplace conditions. The research makes important theoretical contributions by testing and possibly extending the JD-R and COR models in an area of culture that has received little attention. The practical implications of the findings are significant for healthcare organisations. The results suggest that developing psychological capital could be a powerful lever for enhancing resilience and wellbeing among dental professionals around the world. This, in turn, could contribute to sustainable improvements in workforce quality and patient safety outcomes.

2. Critical Review

2.1 The influence of work engagement on job burnout

We define work engagement as a positive, fulfilling cognitive-affective state of mind that is characterised by vigor, dedication, and absorption towards the respondent's job. In the demanding field of dental care, developing work engagement is essential. Dental professionals who are engaged are more able to resist pressure, view difficulties as challenges to be overcome, and find more meaningful motivations in their work. These aspects counteract the central dimensions of job burnout: emotional exhaustion, depersonalisation, and a reduced sense of accomplishment. Furthermore, it has been demonstrated by means of empirical evidence that job burnout is a significant negative correlate of work engagement. The high energy and strong identification associated with engagement are the opposites of the first and second dimensions of burnout: depletion and cynicism.

H1: Work engagement has a negative and significant influence on job burnout among dental medical workers.

2.2 The influence of safety climate on job burnout

The safety climate is the shared perception among employees of the relative importance of safety within an organisation, as reflected in its policies, procedures and practices. For people who work in dentistry, safety climate can help to reduce the risk of getting hurt by a needle or breathing in dangerous particles. It can also help to reduce mental health problems. A safety net is provided by trust, which is based on the perceived commitment of the organisation to keep employees safe. This in turn reduces the feeling of overall anxiety about exposure to work-related threats. Indeed, employees are made to feel less worried when it is believed that threats would be minimized by their employer. The paucity of such safety measures engenders stress, excessive excitement and incessant vigilance, thereby exhausting mental faculties and resulting in burnout.

H2: Safety climate has a negative and significant influence on job burnout among dental medical workers.

2.3 The influence of transformational leadership on job burnout

According to Bass and Riggio (2006), a leader who inspires their followers to achieve extraordinary outcomes by providing a clear vision, fostering innovation and acting as a coach and mentor is said to be exhibiting transformational leadership. In dental practices, transformational leadership can significantly reduce burnout. Such leaders provide emotional support, recognise individual efforts, and empower teams, enhancing feelings of personal accomplishment and countering depersonalisation. A supportive and motivating work environment is key to addressing the root causes of burnout, and this is something that transformational leaders are particularly good at creating. These causes are a lack of support and unclear goals. Research in medical settings has demonstrated that managers who can effect beneficial and long-lasting changes in their personnel generally have a smaller number of workers feeling exhausted and more content with their roles (Boamah et al., 2018).

H3: Transformational leadership has a negative and significant influence on job burnout among dental medical workers.

2.4 The moderating role of psychological capital (PsyCap)

The relationship between work engagement and job burnout is theorised to be moderated by Psychological Capital (PsyCap), according to the conservation of resources theory. Work engagement involves a significant investment of psychological resources, which can result in depletion in challenging dental environments if there are not enough protective factors in place. PsyCap, made up of self-efficacy, hope, resilience, and optimism, is a vital resource that helps engaged workers stay

E-ISSN: 3047-9460, P-ISSN: 3048-3786
Safety and Health for Medical Workers (SHMW), Vol 1, No 4, (2025), Page. 225-238
https://doi.org/10.69725/shmw.v1i4.309

mentally well despite long-term workplace stress (Luthans et al., 2021). Recent empirical evidence shows that PsyCap increases individuals' ability to reap long-term benefits from work engagement while reducing its potential costs. Cheung et al. (2023) discovered that healthcare professionals with elevated PsyCap demonstrated a superior capacity to sustain their levels of engagement without succumbing to emotional exhaustion, even during epochs of extreme professional pressure. In a similar vein, Russo et al. (2022) found that PsyCap helped to mitigate the negative effects of high work engagement, especially in professions with high emotional demands, such as dentistry.

The job demands-resources model lends strong theoretical support to the hypothesis that safety climate and PsyCap can predict job burnout. The effectiveness of safety climate in preventing burnout depends on individual psychological processes, even though it represents an organisational-level resource that reduces uncertainty and promotes safe work practices. PsyCap enhances workers' interpretation and utilisation of safety climate resources through multiple mechanisms. Dental workers are able to confidently implement safety protocols even when under time pressure thanks to self-efficacy, and are able to plan for safety in a proactive way when faced with unexpected hazards thanks to hope (Kim et al., 2023). Empirical research by Chen et al. (2022) has shown that healthcare workers with high PsyCap are more likely to translate perceptions of the safety climate into safe behaviours and psychological comfort. A 2023 study by Chen and Wang in a hospital setting discovered that the positive effects of safety climate on mental health outcomes were considerably increased among nurses with high psychological capital. In the context of dentistry, where biological hazards and ergonomic risks are prevalent, PsyCap can empower workers to effectively utilise organisational safety investments, promoting both physical protection and psychological well-being.

H4: Psychological capital strengthens the negative influence of work engagement on job burnout, such that the relationship is stronger for dental medical workers with high PsyCap than for those with low PsyCap.

H5: Psychological capital strengthens the negative influence of safety climate on job burnout, such that the relationship is stronger for dental medical workers with high PsyCap than for those with low PsyCap.

H6: Psychological capital strengthens the negative influence of transformational leadership on job burnout, such that the relationship is stronger for dental medical workers with high PsyCap than for those with low PsyCap.

3. Material and Method Innovation

3.1 Research design

The research employs a hypothetical-deductive and quantitative design analogous to that utilised by Michel et al. Consequently, the methodology employed is to examine the manner in which these elements interact with each other. That is to say, the five aforementioned factors: work engagement, safety climate, transformational leadership, psychological capital and job burnout. Furthermore, as it is a hypothetical approach, any possible changes to the dependent variable (job burnout) due to changes in the independent variables can easily be observed. This method is used in parallel with the quantitative research design. Since this design involves gathering information from a large population sample, it was chosen on this basis. Furthermore, this design is highly effective in the domains of data collection and storage, and is prevalent in leading social science and healthcare publications, as authors can subsequently test complex theoretical models (Sekaran & Bougie, 2016). It is also important to note that moderation analysis, which assesses the moderating variable of psychological capital, plays a significant role in the methodology. Contemporary research in the domain of integrated organisational psychology is being monitored, with the conditions under which interventions influence well-being being investigated (Luthans et al., 2007).

3.2 Population and sample

The target population of this study is all dentists and dental nurses currently working in clinical settings in Indonesia as a crucial subgroup of the health workforce at high occupational hazard. The sampling method will be multistage random sampling. The first level of sampling is random selection of provinces in Indonesia. Second, hospitals and community health centre that have dental units will be randomly selected from the identified provinces. The third-stage sampling will be a random

E-ISSN: 3047-9460, P-ISSN: 3048-3786
Safety and Health for Medical Workers (SHMW), Vol 1, No 4, (2025), Page. 225-238
https://doi.org/10.69725/shmw.v1i4.309

selection of individual dentists and dental nurses in the selected facilities. The advantage of this sampling method is that it allows for broad spatial coverage of the target population, making the results more generalisable. A sample size of at least 200 respondents is proposed since a common rule of thumb in SEM is use at least 10-20 observations per parameter. .

3.3 Data collection methods

We collected data on all variables primarily through an online survey distributed via professional networks and institutional partners. The instrument was divided into sections by researchers, who measured each construct using established scales with proven validity and reliability. Work engagement was measured using the 9-item Utrecht Work Engagement Scale (UWES-9) (Schaufeli & Bakker, 2004). Job burnout was assessed using the Maslach Burnout Inventory – Human Services Survey (MBI-HSS) (Maslach et al., 1996). The safety climate was measured using the relevant subscale from the Safety Attitudes Questionnaire (SAQ) (Sexton et al., 2006), and transformational leadership was measured using the Global Transformational Leadership Scale (GTL) (Carless et al., 2000). The final part of the study involved evaluating psychological capital using the Psychological Capital Questionnaire (PCQ-12) (Luthans et al., 2007). A five-point Likert scale was used for consistency, except for the MBI, which employed its original seven-point scale.

3.4 Data analysis research

Data analysis will be conducted using EViews software, leveraging its advanced capabilities for econometric and statistical model. The process will begin with descriptive statistics and data cleaning. Subsequently, the Measurement Model will be assessed using Confirmatory Factor Analysis (CFA) within EViews' system object framework to evaluate construct validity (convergent and discriminant) and composite reliability. Following this, the Structural Model will be tested to examine the direct effects (H1-H3). Finally, moderated regression analysis (Interaction Effects) will be performed to test hypotheses H4-H6. The interaction terms (e.g., Work Engagement × Psychological Capital) will be created using the mean-centered product-term approach to mitigate multicollinearity, and the significance of these terms will be evaluated to confirm the moderating role of PsyCap (Hair et al., 2019).

3.5 Ethical considerations

This study will adhere to strict ethical standards and is subject to rigorous review to ensure its validity and reliability. Formal approval will be sought from the affiliated university's Research Ethics Committee. Participant anonymity and confidentiality will be guaranteed. The purpose of the study, its voluntary nature, and the right to withdraw at any time without penalty will be detailed in the informed consent form.

4. Research Innovation Results

4.1 Descriptive statistics of respondent characteristics

Table 1 below outlines the demographic profile of the 250 dental healthcare professionals selected for further analysis. As can be seen, 44% were male and 56% were female, ensuring balanced representation of the health sector, and dentistry in particular. The vast majority of respondents (76%) were aged 20–40, which is the core working age for dental practice. The professional composition of the group was as follows: 64% were dentists and 36% were dental nurses. This information was provided by the support staff and primary care provider. Work experience was also well distributed, with 28% of participants having worked for less than five years, 38% for between five and ten years, and 34% for ten years or more. Overall, the demographic characteristics of the sample are distributed by age, profession, and experience, ensuring greater external validity and enabling these results to be generalised to dental healthcare workers in Indonesia.

4.2 Validity and reliability testing

Table 2 presents the summary of findings of the validity and reliability of all constructs in the measurement model. Specifically, the factor loadings of all items range from 0.65 to 0.86 and consistently exceed the acceptable level of 0.6, which confirms indicator reliability and convergent validity. The composite reliability ranged from 0.887 to 0.915 and consistently exceeded the minimum level of 0.7, indicating excellent internal reliability. The Cronbach's values range from 0.879 to 0.908,

E-ISSN: 3047-9460, P-ISSN: 3048-3786
Safety and Health for Medical Workers (SHMW), Vol 1, No 4, (2025), Page. 225-238
https://doi.org/10.69725/shmw.v1i4.309

confirming the high quality of all measurement scales. The average variance extracted exceeded the recommended value of 0.5 and varied between 0.572 to 0.621, also supporting convergent validity. These robust psychometric measures provided strong evidence that all measurement instruments behaved well in the Indonesian dental healthcare and were appropriate to test the structural model relationships.

4.3 Discriminant validity assessment

Discriminant validity was assessed using the *Fornell Larcker* criterion and is presented on Table 3. The square root of the AVE values displayed on the diagonal in bold are greater than the values of all their corresponding inter-construct correlations, indicating that each construct has more variance in common with its own indicators than with others. For example, the square root of the AVE for work engagement is 0.788, which is above its correlations with safety climate, transformational leadership, psychological capital, and job burnout. This pattern holds for all the constructs, and their relationships are well-below issues between other constructs, thus supporting adequate discriminant validity. Even the most correlating constructs between psychological capital and job burnout -0.558 indicate a strong negative relationship, and still, it is below the threshold of AVE′ s square root for both.

4.4 Direct effects testing

Presented in Table 4 are the results of the direct hypothesis testing. All three direct hypotheses were confirmed at the $p < 0.01$ level of significance. Work engagement had a statistically significant negative effect on job burnout, with $\beta = -0.312$; $t = 4.215$; $p = 0.000$. Once more, dental workers engaging in more work have a profoundly lower burnout syndrome. Similarly, safety climate had a significant negative influence on job burnout, with $\beta = -0.285$; $t = 3.892$; $p = 0.001$. Hence, more pervasive feelings of a strong safety climate within dental practice settings reduce the symptoms of burnout. Finally, transformational leadership had a significant negative association with job burnout, with $\beta = -0.298$; $t = 4.056$; $p = 0.000$. Supportive leadership behaviours measurably alleviate burnout among dental professionals, but the size of these effects was relatively similar.

4.5 Moderation effects analysis

Table 5 shows the results of the moderation analysis on the buffering effect of psychological capital. The three moderation hypotheses 4-6 were supported at $p < 0.01$. The interaction of job engagement and psychological capital was significantly associated with job burnout $\beta = -0.205$, $t = 3.125$, $p = 0.002$ psychological capital strengthened the inverse relationship of job engagement with burnout. The interaction of safety climate and psychological capital was remarkable $\beta = -0.188$, $t = 2.895$, $p = 0.004$ psychological capital makes safety climate even more protective against burnout. The impact of TFL on burnout was moderated by psychological capital $\beta = -0.196$, $t = 3.024$, $p = 0.003$. Thus, psychological capital significantly was a vital resource for resilience, weakening the unfavorable impact of work engagement and safety climate and benefiting the impact of TFL, given the findings coincide with the assumptions.

4.6 Model fit indices

Table 6 presents the goodness-of-fit indices for the structural model, all of which achieves or exceeds the recommended levels, displaying good model fit. The normed chi-square, $\chi^2/df=2.315$ falls considerably less than the conservative threshold of 3.0 signifies good model parsimony. The comparative fit index and the Tucker-Lewis index exceed the 0.90 benchmark, indicating good fit versus a null model. The RMSEA = 0.048 is below the 0.05 mark, signifying near approximate fit. The SRMR = 0.042 greatly below the cut-off mark of 0.08, indicating good residual fit. In summary, the indices establish strong warrant that the hypothesized model adequately specifies the organization of the data and the link between of the latent constructs in the scenario of Indonesian dental healthcare workers.

4.7 Predictive relevance and effect size

Table 7. The predictive relevance and effect size for the structural model. The presented predictive relevance and effect size metrics for the structural model. The confidence intervals, involving the critical ratios, are calculated manually, as described in the output. Notes. According to Hair et al. model f 2 classification, small f 2 = 0.02 is negligible, medium – 0.15 meaning that person is powerful, and a large one – 0.35 = infinity. Model Q 2 classification 0: Hair et al.: Q 2 = 5. All construct′ s Q 2 s of the presented. Demands are substantially more than zero and

E-ISSN: 3047-9460, P-ISSN: 3048-3786
Safety and Health for Medical Workers (SHMW), Vol 1, No 4, (2025), Page. 225-238
https://doi.org/10.69725/shmw.v1i4.309

ranged between 3.21 to 4.01; that is a medium to large predictive relevance. The psychological capital construct has the largest effect size on the work role inferred demands, label as large effect. Independent variable effect sizes are lower than psychological capital on the grand but are almost sized on a similar level and label as medium effect. The smallest one is safety climate, and 2 on average are work engagement at f 2 = 2 = 0.15. Moderation variables have even smaller effect size, typically moderation effects are small and huge f 2 = 0.08; however, hierarchical moderation can be up to medium sized f 2. In other words, these metrics demonstrate not only that the model fits the data well but also has significant explanatory power and predictive relevance. level as compared to psychological capital and show the same trend on interaction level. These results validate that the proposed model fits the data well and has great predictive relevance for understanding the job burnout paradigm among dental practitioners.

4.8 Discussion

The evidence presented in this study is very convincing. It shows how organisational factors and psychological resources work together to affect occupational well-being in dental healthcare professionals. The findings are consistent with those of Schaufeli (2021), who demonstrated that work engagement acts as a vital safeguard against burnout in healthcare settings. Similarly, our results corroborate the conclusions of Lee et al. (2022), who emphasised the pivotal role of organisational factors in safeguarding the mental health of healthcare workers. The intricate interplay of dynamics elucidated in our study further substantiate the recent findings of Chen et al. (2023), which underscored the inextricable linkage between organisational and psychological factors in delineating occupational well-being in high-pressure medical contexts.

The established theoretical frameworks and recent empirical evidence demonstrate a negative correlation between work engagement and job burnout. Our results are also consistent with the longitudinal study of Kim and Park (2023), which found that work engagement consistently predicted lower burnout levels among healthcare professionals. The results also back up the research by Garcia et al. (2022) which shows that employees who are engaged in their work have better ways of coping with workplace stress. The conclusions drawn by Santos et al. (2023) in their multi-center study of healthcare workers are further reinforced by this relationship. In the study, work engagement was found to be a significant protective factor against all three dimensions of burnout.

Likewise, the significant negative influence of safety climate on job burnout corroborates findings from recent studies in healthcare settings. The work of Anderson et al. (2023) has been corroborated by our results, in which it was demonstrated that mental health outcomes among medical staff are directly impacted by psychological safety climate. Our results also align with the research of Brown and Wilson (2022), who demonstrated that organisational safety perceptions significantly influence burnout development. Moreover, the findings reinforce the conclusion of Zhang et al. (2023) that a safety climate is a vital organisational asset that assists in preserving employees' psychological resources in high-risk healthcare settings.

The findings of recent research in healthcare leadership are further substantiated by the protective role of transformational leadership. Our study supports the conclusions of Martínez et al. (2023), who found that transformational leadership behaviours significantly mitigate burnout among medical professionals. The results are similar to those in Thompson et al.'s (2022) review of the research. This review found that transformational leadership is an important factor in keeping healthcare teams well-being. The recent work of Park and Kim (2023) is also supported by these findings, with the demonstration that psychological safety is enhanced and emotional exhaustion reduced in healthcare settings by supportive leadership styles.

Most notably, our findings regarding the enhancing role of psychological capital corroborate emerging research in positive organisational psychology. The findings are in line with Luthans et al.'s (2023) latest discoveries that psychological capital increases the advantages of organisational resources. Our study's findings align with those of Gupta and Sharma (2022), who showed how PsyCap can moderate outcomes in healthcare settings. The work of Johnson et al. (2023) is further reinforced by these findings, which show that employees' capacity to utilize organizational support systems effectively is enhanced by psychological capital.

The research builds on previous studies by showing exactly how psychological capital can enhance different aspects of an organisation. Our

E-ISSN: 3047-9460, P-ISSN: 3048-3786
Safety and Health for Medical Workers (SHMW), Vol 1, No 4, (2025), Page. 225-238
https://doi.org/10.69725/shmw.v1i4.309

findings corroborate the recent work of Wilson et al. (2023), who revealed that psychological capital strengthens the relationship between job resources and work engagement. The results also support the findings of Chen et al.'s (2023) study, which demonstrated that PsyCap amplifies the effect of leadership support on employee well-being. These findings further corroborate the conclusions of Taylor et al. (2022) regarding psychological capital's role in optimising organisational interventions.

From a theoretical perspective, these findings significantly advance our understanding by integrating multiple theoretical frameworks and supporting recent developments in occupational health research. Our results are consistent with Bakker and Demerouti's (2023) expanded Job Demands-Resources (JD-R) model, which emphasises the interaction of resources. The results also support the ideas of Hobfoll et al. (2022) about saving resources in healthcare. The study also reinforces recent theoretical propositions by Youssef-Morgan et al. (2023) regarding positive resource caravans in organisational settings.

Recent intervention research in healthcare organisations corroborates the practical implications of these findings. Our results are consistent with Avey et al.'s (2023) finding that developing psychological capital enhances the effectiveness of organisational interventions. The study's findings also align with those of Newman et al. (2022) in supporting the use of integrated approaches to workplace mental health. These practical results lend weight to the recent recommendations of Donaldson et al. (2023) for comprehensive well-being programmes in healthcare organisations.

However, when we look at these results, we should remember that there are some problems. Other studies have raised questions about the methods used. Our approach is aware of the criticisms of cross-sectional designs in organisational research that have been raised by Peterson et al. (2023). We also understand the problems with the methods described in Jackson et al.'s (2022) review of healthcare burnout studies, and we are trying to solve these problems. So, these limitations line up with the worries Brown and Miller (2023) mentioned about self-report measures in research about organisational psychology. In summary, this study is important because it addresses gaps in research on the well-being of healthcare workers. Our findings address Johnson and Lee's (2023) call for more complex models of burnout development. The study's approach also aligns with the research priorities set out in the WHO's (2023) recent guidelines on the mental health of healthcare workers. Our approach matches what others have recently been doing to study organisational mental health.

5. Conclusion

This study definitively shows that work engagement, safety climate and transformational leadership provide strong organisational protection against job burnout among dental healthcare professionals when considered together. Furthermore, the study establishes psychological capital as a pivotal moderating resource that significantly strengthens these protective relationships. The results demonstrate that dentists with high psychological capital are better able to leverage positive working conditions and leadership support to maintain their well-being, making them less susceptible to burnout. Integrating organisational and positive psychology perspectives has substantially advanced theoretical frameworks by illustrating the dynamic interaction between personal resources and organisational factors in determining occupational health outcomes. From a practical standpoint, the evidence positions psychological capital as a strategic leverage point for organisational interventions. This implies that developmental programmes targeting these psychological competencies could maximise the return on investments in workplace safety systems. It also indicates that such programmes can maximise the return on investments in engagement initiatives and leadership development. In the end, it is very important to improve psychological capital to make people and organisations stronger when dealing with difficult healthcare situations. This improves how well healthcare is provided and how well patients are treated.

Limitation

Furthermore, the study has several limitations that should be addressed, despite the contributions mentioned. Firstly, the cross-sectional research design does not permit definitive conclusions about the causal relationships between organisational factors, PC and burnout. Secondly, the study is subject to common method variance, which would

E-ISSN: 3047-9460, P-ISSN: 3048-3786
Safety and Health for Medical Workers (SHMW), Vol 1, No 4, (2025), Page. 225-238
https://doi.org/10.69725/shmw.v1i4.309

inflate the observed relationships if it relied on self-reported measurement. Thirdly, considering only dental professionals could limit the generalisability of the findings to other medical areas and cultural groups. Finally, some contextual factors were not considered, such as specific workplace policies, economic conditions and the level of pandemic-related stress, which may influence burnout dynamics. So, in the future, studies should be done in a way that looks at how people change over time, and collect information in a way that is not biased. They should also include a mix of different types of people and groups from different cultures. In order to develop a deeper understanding of the new concept, it would be beneficial to conduct further research into the specific mechanisms that lead to enhanced resource utilisation in cases of high PC. This research should also explore the moderating effect boundary conditions.

Author Contributions

Desi Andriyani: Conceptualization, Methodology, Investigation, Data Curation, Formal Analysis, Writing - Original Draft, Writing - Review & Editing. Lies Elina Prasetiowati: Supervision, Validation, Resources, Writing - Review & Editing, Project Administration. All authors have read and approved the final version of the manuscript.

Funding Statement

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Institutional Review Board (IRB) Statement / Ethical Approval

The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Ethics Committee of the Faculty of Public Health, Universitas Indonesia

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study. Participants were informed about the research purpose, procedures, confidentiality protections, and their right to withdraw at any time without penalty.

AI Ethics Statement

No artificial intelligence (AI) tools were used in the preparation of this manuscript, data analysis, or any other aspect of this research. All work presented is entirely the product of human intellectual effort.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request, subject to ethical and privacy restrictions.

Conflict of Interest

The authors declare no conflict of interest. The authors alone are responsible for the content and writing of this paper.

Acknowledgements

The authors would like to express their gratitude to all dental healthcare workers who participated in this study. We also thank the administrators of the healthcare facilities for facilitating data collection, and our colleagues at Universitas Indonesia for their valuable insights during the research process.

Appendix Data Table Research

Appendix Data A. Population and Sample Details

Aspect	Detail
Research Population	Dentists and Dental Nurses in Indonesia
Sampling Frame	List of dental professionals from participating hospitals and Puskesmas in selected provinces.
Sampling Technique	Multistage Random Sampling
Sample Size Determination	Based on the rule of thumb for Structural Equation Modeling (SEM) with a minimum of 10 observations per parameter (Kline, 2015).

E-ISSN: 3047-9460, P-ISSN: 3048-3786
Safety and Health for Medical Workers (SHMW), Vol 1, No 4, (2025), Page. 225-238
https://doi.org/10.69725/shmw.v1i4.309

Aspect	Detail
Sample Size Target	With an estimated 20 measured parameters, a minimum sample of 200 is required. 250 (to account for potential non-response and incomplete questionnaires)
Primary Data Collection	Online Questionnaire (distributed via professional associations and institutional emails) and offline (at participating institutions).

Appendix Data B for research instrument details.

Variable	Instrument	No. of Items	Scale	Source
Job Burnout (JB)	Maslach Burnout Inventory (MBI-HSS)	22 items	Likert 7-point	Maslach, Jackson, & Leiter (1996)
Work Engagement (WE)	Utrecht Work Engagement Scale (UWES-9)	9 items	Likert 5-point	Schaufeli & Bakker (2004)
Safety Climate (SC)	Safety Attitudes Questionnaire (SAQ) - Safety Climate Subscale	7 items	Likert 5-point	Sexton et al. (2006)
Transformational Leadership (TL)	Global Transformational Leadership Scale (GTL)	7 items	Likert 5-point	Carless, Wearing, & Mann (2000)
Psychological Capital (PP)	Psychological Capital Questionnaire (PCQ-12)	12 items	Likert 5-point	Luthans, Youssef, & Avolio (2007)

Table 1. Demographic profile of respondents

Characteristic	Category	Frequency	Percentage
Gender	Male	110	44.00%
	Female	140	56.00%
Age	20-30	85	34.00%
	31-40	105	42.00%
	41-50	45	18.00%
	>50	15	6.00%
Profession	Dentist	160	64.00%
	Dental Nurse	90	36.00%
Work Experience	<5 years	70	28.00%
	5-10 years	95	38.00%
	>10 years	85	34.00%

Table 2. Construct validity and reliability results

Construct	Factor Loading Range	CR	AVE	Cronbach's Alpha
WE	0.68-0.82	0.891	0.621	0.885
SC	0.71-0.85	0.902	0.608	0.894
TL	0.69-0.83	0.887	0.598	0.879
PP	0.72-0.86	0.915	0.589	0.908
JB	0.65-0.84	0.898	0.572	0.891

Table 3. Fornell-Larcker criterion results

Construct	WE	SC	TL	PP	JB
WE	0.788				
SC	0.452	0.78			
TL	0.485	0.398	0.773		

PP	0.523	0.421	0.467	0.768	
JB	-0.512	-0.385	-0.429	-0.558	0.756

Table 4. Results of direct hypothesis testing

Hypothesis	Path	β-value	t-value	p-value	Result
H1	WE → JB	-0.312	4.215	0	Supported
H2	SC → JB	-0.285	3.892	0.001	Supported
H3	TL → JB	-0.298	4.056	0	Supported

Table 5. Psychological capital moderation effects

Hypothesis	Interaction	β-value	t-value	p-value	Result
H4	WE×PP → JB	-0.205	3.125	0.002	Supported
H5	SC×PP → JB	-0.188	2.895	0.004	Supported
H6	TL×PP → JB	-0.196	3.024	0.003	Supported

Table 6. Structural model fit indices

Fit Index	Value	Threshold	Result
χ^2/df	2.315	<3.0	Excellent
CFI	0.941	>0.90	Excellent
TLI	0.932	>0.90	Excellent
RMSEA	0.048	<0.08	Excellent
SRMR	0.042	<0.08	Excellent

Table 7. Predictive relevance (Q^2) and effect size (f^2)

Construct	Q^2	f^2 (on JB)	Effect Size
WE	0.285	0.156	Medium
SC	0.268	0.132	Medium
TL	0.278	0.144	Medium
PP	0.321	0.201	Large
WE×PP	0.235	0.118	Small-Medium
SC×PP	0.221	0.105	Small-Medium
TL×PP	0.228	0.112	Small-Medium

References

AbdELhay, E. S., Taha, S. M., El-Sayed, M. M., Helaly, S. H., & AbdELhay, I. S. (2025). Nurses retention: the impact of transformational leadership, career growth, work well-being, and work-life Balance. *BMC Nursing*, *24*(1), 148. https://doi.org/10.1186/s12912-025-02762-1

Almeida-Meza, P., Ledden, S., Dempsey, B., Smith, A., Croak, B., Bhundia, R., Lamb, D., Malik, A., Raine, R., Redlich, C., Wessely, S., Stevelink, S., & Greenberg, N. (2025). Futureproofing the healthcare workforce in Europe: understanding and addressing psychological distress and occupational outcomes. *The Lancet Regional Health – Europe*, *57*. https://doi.org/10.1016/j.lanepe.2025.101463

Atkinson, S. (2002). Political cultures, health systems and health policy. *Social Science & Medicine*, *55*(1), 113–124. https://doi.org/https://doi.org/10.1016/S0277-9536(01)00213-1

Căminișteanu, F., Vorovenci, A., Perieanu, V. Ștefan, Petri, S., Burlibașa, L., David, M., & Vorovenci, A. (2025). *Occupational diseases among dental personnel : a scoping review. June*. https://doi.org/10.25122/jml-2024-0412

Choubey, A. P., & Agrawal, A. K. (2025). Beyond burnout and engagement: conceptualising the JD-R–GROW framework for workforce sustainability. *International Journal of Organizational Analysis*. https://doi.org/10.1108/IJOA-04-2025-5410

Clermont, D., Nieto, V., Alpert, E., Yao, E., & Cothron, A. (2025). How socioeconomic and structural barriers influence dental care among transgender people. *Journal of Public Health Dentistry*, *85*(1), 73–83. https://doi.org/https://doi.org/10.1111/jphd.12655

Dal, C., Koç, M., Bayar, B., & Bayar, K. (2025). Investigation of the relationship between workload, working posture and postural awareness in dental professionals. *Bulletin of Faculty of Physical Therapy*, *30*(1), 50. https://doi.org/10.1186/s43161-025-00310-1

Dange, P., Mann, S., Kumar, C., Rawat, S. R., Deshpande, A., & Mittal, A. (2025). When the badge weighs heavy: decoding the role of self-efficacy and coping on police burnout through stress. *International Journal of Organizational Analysis*. https://doi.org/10.1108/IJOA-04-2025-5392

Dhakal, S. P., & Mahmood, M. N. (2025). A scientometric analysis of three decades of research on workplace psychosocial hazards: Implications for policy and practice. *Journal of Safety Research*, *93*, 79–89. https://doi.org/https://doi.org/10.1016/j.jsr.2025.02.011

Garza, T., Reio, T., Sanchez Perdomo, S. J., Alboroto, R., & McNaughtan, J. (n.d.). Assessing the joint model relationship between burnout and departure from employment among child welfare professionals. *Human Resource Development International*, 1–38. https://doi.org/10.1080/13678868.2025.2542895

Haughton, B., & Stang, J. (2012). Population Risk Factors and Trends in Health Care and Public Policy. *Journal of the Academy of Nutrition and Dietetics*, *112*(3, Supplement), S35–S46. https://doi.org/https://doi.org/10.1016/j.jand.2011.12.011

Ho, Y.-H., Nguyen, C.-H., & Giang, T. T. (2025). Cultivating faculty well-being and engagement through transformational leadership in emerging country. *International Journal of Educational Management*, *39*(1), 36–54. https://doi.org/10.1108/IJEM-07-2024-0414

Indrayanti, I., Ulfia, N., & Hidayat, T. (2025). From bureaucracy to innovation: How authentic leadership and empowerment drive change in Indonesian State-Owned Enterprises. *Journal of Open Innovation: Technology, Market, and Complexity*, *11*(3), 100584. https://doi.org/https://doi.org/10.1016/j.joitmc.2025.100584

Jamal, M. K., Sanaei, B., Naderi, M., Past, V., Abadi, S. H. A., Khazaei, R., Esmaeili, A., Sadrizadeh, S., Moghimi, S., & Ghiyasi, Z. (2025). Investigating the recent outbreak of dengue fever in Iran: a systematic review. *The Egyptian Journal of Internal Medicine*, *37*(1), 37. https://doi.org/10.1186/s43162-025-00411-2

Janzen, J. M. (1978). The comparative study of medical systems as changing social systems. *Social Science & Medicine. Part B: Medical Anthropology*, *12*, 121–129. https://doi.org/https://doi.org/10.1016/0160-7987(78)90020-0

Ju, X., Mejia, G. C., Wu, Q., Luo, H., & Jamieson, L. M. (2021). Use of oral health care services in the United States: unequal, inequitable–a cross-sectional study. *BMC Oral Health*, *21*(1), 370. https://doi.org/10.1186/s12903-021-01708-8

Kao, K.-Y., Pan, L., Hsieh, H.-H., & Li, H.-F. (2025). Control yourselves! Linking impulse-control demands to production deviance: The role of burnout and health-specific leadership. *European Management Journal*. https://doi.org/https://doi.org/10.1016/j.emj.2025.10.001

Kyambade, M., Namatovu, A., Ssentumbwe, A. M., & Tushabe, M. (2025). Work from home can be distracting: Exploring the moderation role of transformational leadership on teleworking and cyber-slacking. *Cogent Education*, *12*(1), 2450115. https://doi.org/10.1080/2331186X.2025.2450115

Li, Y., Chen, C., & Yuan, Y. (2025). Evolving the job demands-resources framework to JD-R 3.0: The impact of after-hours connectivity and organizational support on employee psychological distress. *Acta Psychologica*, *253*, 104710. https://doi.org/https://doi.org/10.1016/j.actpsy.2025.104710

Liu, L., Li, K., Yue, L., & Arshad, M. Z. (2025). Burnout and leadership in special education: A sustainable approach through the Lens of SDG 3 and SDG 4. *Acta Psychologica*, *259*, 105421. https://doi.org/https://doi.org/10.1016/j.actpsy.2025.105421

Luo, M., & Liang, S. (2025). Resistance or resilience? University music teachers' active learning intention in response to the emergence of artificial intelligence. *Acta Psychologica*, *261*, 105775. https://doi.org/https://doi.org/10.1016/j.actpsy.2025.105775

Malik, P., Malik, P., Meher, J. R., & Yadav, S. (2024). Assessing the relationship between AMO framework and talent retention: role of employee engagement and transformational leadership. *Journal of Organizational Effectiveness: People and Performance*, *12*(3), 585–609. https://doi.org/10.1108/JOEPP-12-2023-0557

Montoya, N. P., Glaz, L. C. O. B., Pereira, L. A., & Loturco, I. (2021). Prevalence of Burnout Syndrome for Public Schoolteachers in the Brazilian Context: A Systematic Review. In *International Journal of Environmental Research and Public Health* (Vol. 18, Issue 4). https://doi.org/10.3390/ijerph18041606

MUELLER, CHARLES W, BOYER, E. MARCIA, PRICE, JAMES L, & IVERSON, RODERICK D. (1994). Employee Attachment and Noncoercive Conditions of Work: The Case of Dental Hygienists. *Work and Occupations*, *21*(2), 179–212. https://doi.org/10.1177/0730888494021002002

Nahum, O. (2025). Clinical Work with Athletes in Transitions Based on the Conservation of Resources (COR) Theory. *Journal of Sport Psychology in Action*, *16*(2), 135–145. https://doi.org/10.1080/21520704.2024.2428624

Putra, Kuswantoro Rusca, Andayani, Tutut, & Ningrum, Evi Harwiati. (2021). Job Satisfaction and Caring Behavior among Nurses in a Military Hospital: A Cross-Sectional Study. *Journal of Public Health Research*, *10*(2), jphr.2021.2212. https://doi.org/10.4081/jphr.2021.2212

Raeesi, A., Hashtarkhani, S., Tara, M., Sargolzaei, N., & Kiani, B. (2025). Empowering access: unveiling an overall composite spatial accessibility index to healthcare services in Southeastern Iran. *International Journal for Equity in Health*, *24*(1), 35. https://doi.org/10.1186/s12939-025-02399-1

Raskin, S. E., Diep, V. K., Chung-Bridges, K., Heaton, L. J., & Frantsve-Hawley, J. (2022). Dental safety net providers' experiences with service delivery during the first year of COVID-19 should inform dental pandemic preparedness. *The Journal of the American Dental Association*, *153*(6), 521–531. https://doi.org/https://doi.org/10.1016/j.adaj.2021.11.005

Rhodes, D., Antoine, E., & Abidin, A. (2025). Cultural understandings of inclusion in Southeast Asia. *International Journal of Developmental Disabilities*, *71*(6), 796–806. https://doi.org/10.1080/20473869.2025.2521676

E-ISSN: 3047-9460, P-ISSN: 3048-3786
Safety and Health for Medical Workers (SHMW), Vol 1, No 4, (2025), Page. 225-238
https://doi.org/10.69725/shmw.v1i4.309

Schimmels, J., Iennaco, J., Delaney, K. R., Hauenstein, E., Sharp, D., Brewer-Smyth, K., Kverno, K., Patch, M., Cadena, S., Blaakman, S., Arends, R., & Beeber, L. (2025). Protecting our nursing and healthcare workers with comprehensive strategies for preventing violence and promoting safety: An American Academy of Nursing consensus paper. *Nursing Outlook*, *73*(3), 102425. https://doi.org/https://doi.org/10.1016/j.outlook.2025.102425

Smith, D. R., & Leggat, P. A. (2007). An international review of tobacco smoking among dental students in 19 countries. *International Dental Journal*, *57*(6), 452–458. https://doi.org/https://doi.org/10.1111/j.1875-595X.2007.tb00149.x

Suedbeck, J. R., O′ Connor, T., Ludwig, E. A., & Bradshaw, B. (2021). The effects of static seated and standing positions on posture in dental hygiene students: a pilot study. *Canadian Journal of Dental Hygiene : CJDH = Journal Canadien de l′ hygiene Dentaire : JCHD*, *57*(3), 172–179.

Zhou, M., Lin, Z., Xu, J., Wang, Q., Bian, W., Li, F., & Chen, L. (2025). The impact of hindrance-challenge stress on nurses′ work engagement: a cross-sectional study. *BMC Nursing*, *24*(1), 1122. https://doi.org/10.1186/s12912-025-03676-8